

ABSTRACT

A production device and a method produce a multicomponent film containing metal components such as TiAlN having greatly different melting points by a melting-evaporation type ion plating method which has high material use efficiency and provides a good film quality. For this end, electric power required to evaporate material (4) is first supplied and then electric power stepwise increased from the first electric power is repeatedly supplied until a required maximum electric power is reached. At the same time, plasma control is performed for converging plasma (7) into an initial area required to evaporate the material and then plasma control is performed for successively and stepwise moving and expanding the plasma from the initial plasma area up to a maximum plasma area to gradually melt a non-melted portion of the material.